WHAT IS CLAIMED IS:

1. A structure having pores comprising:

a substrate;

a plurality of electroconductive layers formed on a surface of the substrate;

a layer primarily composed of aluminum oxide covering the plurality of electroconductive layers and the surface of the substrate where no electroconductive layer is formed; and

a plurality of pores formed in the layer primarily composed of aluminum oxide;

wherein the plurality of pores are disposed above the plurality of electroconductive layers and the surface of the substrate where no electroconductive layer is formed, with a part of the layer primarily composed of aluminum oxide provided under the plurality of pores; and

wherein the layer primarily composed of aluminum oxide provided between the bottom of the pores disposed above the electroconductive layer and the electroconductive layer comprises a material forming the electroconductive layer.

2. A structure having pores according to claim 1, wherein the electroconductive layer comprises at least one element selected from the group consisting of Ti, Zr, Hf, Nb,

Ta, Mo, and W.

3. A structure having pores according to either one of claims 1 and 2, wherein the substrate comprises an insulating material.

4. A structure having pores according to either one of claims 1 and 2, wherein the substrate comprises an electroconductive substrate and a film composed of an insulating material provided on a surface of the electroconductive substrate.

5. A structure having pores according to claim 1, further comprising a material different from aluminum oxide filled in at least one of the plurality of pores.

6. A structure comprising pores according to claim 5, wherein the material different from aluminum oxide is filled in at least one pore disposed above the electroconductive layer.

7. A structure having pores according to claim 5, wherein the material filled in at least one pore disposed above the electroconductive layer is different from the material filled in at least one pore above the surface of

the substrate where no electroconductive layer is formed.

8. A structure having pores according to claim 5, wherein the material filled in at least one pore disposed above the electroconductive layer is in electrical contact with the electroconductive layer.

9. A structure having pores according to any one of claims 5 to 8, wherein the material filled in at least one pore disposed above the electroconductive layer is an electroconductive material.

10. A structure having pores according to claim 5, wherein the material is a magnetic material.

11. A structure having pores according to claim 5, wherein the material has a light-emitting function.

12. A structure having pores comprising:

a substrate;

a patterned electroconductive layer formed on a surface of the substrate;

a layer primarily composed of aluminum oxide covering the electroconductive layer and a surface of the substrate surrounding an area at which the electroconductive layer is

provided; and

a plurality of pores formed in the layer primarily composed of aluminum oxide;

wherein the plurality of pores are disposed above the electroconductive layer and the surface of the substrate surrounding the electroconductive layer, with a part of the layer primarily composed of aluminum oxide provided under the plurality of pores; and

wherein the layer primarily composed of aluminum oxide provided between the electroconductive layer and the bottom of the pores disposed above the electroconductive layer comprises a material forming the electroconductive layer.

13. A structure having pores according to claim 12, wherein the electroconductive layer comprises at least one element selected from the group consisting of Ti, Zr, Hf, Nb, Ta, Mo, and W.

14. A structure having pores according to either one of claims 12 and 13, wherein the substrate comprises an insulating material.

15. A structure having pores according to either one of claims 12 and 13, wherein the substrate comprises an electroconductive substrate and a film composed of an

insulating material provided on a surface of the electroconductive substrate.

16. A structure having pores according to claim 12, further comprising a material different from aluminum oxide filled in at least one of the plurality of pores.

17. A structure having pores according to claim 16, wherein the material different from aluminum oxide is filled in at least one pore disposed above the electroconductive layer.

18. A structure having pores according to claim 16, wherein the material filled in at least one pore disposed above the electroconductive layer is different from the material filled in at least one pore above the surface of the substrate surrounding an area at which the electroconductive layer is provided.

19. A structure having pores according to any one of claims 16 to 18, wherein the material filled in at least one pore disposed above the electroconductive layer is in electrical contact with the electroconductive layer.

20. A structure having pores according to any one of

claims 16 to 18, wherein the material filled in at least one pore disposed above the electroconductive layer is an electroconductive material.

21. A structure having pores according to claim 16, wherein the material is a magnetic material.

22. A structure having pores according to claim 16, wherein the material has a light-emitting function.

23. An electron-emitting device comprising an electron-emitting material provided in at least one pore of a structure having pores according to either one of claims 1 and 12.

24. A magnetic device comprising a magnetic material provided in at least one pore of a structure having pores according to either one of claims 1 and 12.

25. A light-emitting device comprising a light-emitting material provided in at least one pore of a structure having pores according to either one of claims 1 and 12.

26. A method for manufacturing a structure having

pores comprising the steps of:

preparing a substrate;

forming a plurality of electroconductive layers each composed of at least one element selected from the group consisting of Ti, Zr, Hf, Nb, Ta, Mo, and W on a part of a surface of the substrate;

forming a film primarily composed of aluminum so as to cover the plurality of electroconductive layers and a surface of the substrate having no electroconductive layer thereon; and

anodizing the film primarily composed of aluminum so as to form a layer primarily composed of aluminum oxide having a plurality of pores;

wherein the plurality of pores is formed above the electroconductive layer and the surface of the substrate having no electroconductive layer thereon, and

wherein a material forming the electroconductive layer is diffused to a part of the layer primarily composed of aluminum oxide provided between the electroconductive layer and the bottom of the pores above the electroconductive layer.

27. A method for manufacturing a structure having pores according to claim 26, wherein the substrate comprises an insulating material.

28. A method for manufacturing a structure having pores according to claim 26, wherein the substrate comprises an electroconductive substrate and a film composed of an insulating material provided on the electroconductive substrate.

29. A method for manufacturing a structure having pores according to claim 26, wherein the electroconductive layer is an electroconductive film formed on the surface of the substrate, and the film primarily composed of aluminum is formed so that the thickness thereof is not less than two times the thickness of the electroconductive layer.

30. A method for manufacturing a structure having pores according to claim 26, wherein the electroconductive layer is an electroconductive film formed on the surface of the substrate, and the film primarily composed of aluminum is formed so that the thickness thereof is not less than five times the thickness of the electroconductive layer.

31. A method for manufacturing a structure having pores according to claim 26, wherein the electroconductive layer is an electroconductive film formed on the surface of the substrate, and the film primarily composed of aluminum

is formed so that the thickness thereof is not less than ten times the thickness of the electroconductive layer.

32. A method for manufacturing a structure having pores according to claim 26, further comprising a step of increasing the diameter of the pores by etching after the anodizing step.

33. A method for manufacturing a structure having pores according to claim 26, further comprising a step, prior to the anodizing step, of forming a recess on a surface of the film primarily composed of aluminum disposed so as to cover the plurality of electroconductive layers and the surface of the substrate having no electroconductive layer thereon.

34. A method for manufacturing a structure having pores according to claim 26, further comprising a step of depositing a material selectively in at least one pore disposed above the electroconductive layer by applying a voltage thereto in a solution, wherein the material deposited in the pore by electrodeposition is ionized in the solution.

35. A method for manufacturing a structure having

pores according to claim 34, wherein the voltage applied to the electroconductive layer is an alternating voltage or a pulse voltage.

36. A method for manufacturing a structure having pores comprising the steps of:

preparing a substrate;

forming a patterned electroconductive layer composed of at least one element selected from the group consisting of Ti, Zr, Hf, Nb, Ta, Mo, and W on a part of a surface of the substrate;

forming a film primarily composed of aluminum so as to cover the electroconductive layer and a surface of the substrate having no electroconductive layer thereon; and

anodizing the film primarily composed of aluminum so as to form a layer primarily composed of aluminum oxide having a plurality of pores;

wherein the plurality of pores is formed above the electroconductive layer and the surface of the substrate having no electroconductive layer thereon, and

wherein a material forming the electroconductive layer is diffused to a part of the layer primarily composed of aluminum oxide provided between the electroconductive layer and the bottom of the pores above the electroconductive layer.

37. A method for manufacturing a structure having pores according to claim 36, wherein the substrate comprises an insulating material.

38. A method for manufacturing a structure having pores according to claim 36, wherein the substrate comprises an electroconductive substrate and a film composed of an insulating material provided on the electroconductive substrate.

39. A method for manufacturing a structure having pores according to claim 36, wherein the electroconductive layer is an electroconductive film formed on the surface of the substrate, and the film primarily composed of aluminum is formed so that the thickness thereof is not less than two times the thickness of the electroconductive layer.

40. A method for manufacturing a structure having pores according to claim 36, wherein the electroconductive layer is an electroconductive film formed on the surface of the substrate, and the film primarily composed of aluminum is formed so that the thickness thereof is not less than five times the thickness of the electroconductive layer.

41. A method for manufacturing a structure having pores according to claim 36, wherein the electroconductive layer is an electroconductive film formed on the surface of the substrate, and the film primarily composed of aluminum is formed so that the thickness thereof is not less than ten times the thickness of the electroconductive layer.

42. A method for manufacturing a structure having pores according to claim 36, further comprising a step of increasing the diameter of the pores by etching after the anodizing step.

43. A method for manufacturing a structure having pores according to claim 36, further comprising a step, prior to the anodizing step, of forming a recess on a surface of the film primarily composed of aluminum disposed so as to cover the electroconductive layer and the surface of the substrate having no electroconductive layer thereon.

44. A method for manufacturing a structure having pores according to claim 36, further comprising a step of depositing a material selectively in at least one pore disposed above the electroconductive layer by applying a voltage thereto in a solution, wherein the material deposited in the pore by electrodeposition is ionized in the

solution.

45. A method for manufacturing a structure having pores according to claim 44, wherein the voltage applied to the electroconductive layer is an alternating voltage or a pulse voltage.